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Total number of printed pages – 2

B. Tech  
PCBT 4305

**Sixth Semester Regular Examination – 2014**

**PLANT BIOTECHNOLOGY**

**BRANCH : BIOTECH**

**QUESTION CODE : F 229**

**Full Marks – 70**

**Time : 3 Hours**

*Answer Question No. 1 which is compulsory and any **five** from the rest.  
The figures in the right-hand margin indicate marks.*

1. Answer the following questions :

2×10

- What is Hairy root culture ? Why it is used ?
- What is molecular farming ? Give one suitable example where molecular farming has been successful.
- Write the name of two secondary metabolites of plant origin that is having commercial importance.
- What is protoplast technology ?
- What do you mean by suspension culture ? Difference between continuous and batch culture.
- What is osmoticum ? Why it is used ?
- What is synthetic seed ? What are different methods of preparation of synthetic seed ?
- What is golden rice ? Name the transgene used in the development of golden rice.
- What do you mean by Embryo rescue ?
- Define Explant. Write the criteria for selecting suitable explants for tissue culture?

P.T.O.

2. (a) Give the general features of tissue culture media composition, and discuss the roles of various growth regulators. 5
- (b) Describe the basic facilities required for establishing a plant tissue culture laboratory. 5
3. Write short notes on : 5×2
- (a) Biotransformation
- (b) Factors influencing the survival of plantlets in the field
4. Describe the various methods of direct gene transfer by giving suitable examples? 10
5. (a) Describe different methods of micropropagation. 5
- (b) What is somatic hybridization ? Write the procedure for screening and selection of somatic hybrid. 5
6. Briefly Explain : 5×2
- (a) Ti Plasmid
- (b) isolation and purification of secondary metabolites.
7. (a) Bioreactor based production of secondary metabolites. 5
- (b) Terminator seed technology. 5
8. Briefly explain any **two** of the following : 5×2
- (a) Truncated and modified cry genes
- (b) Resistance to drought and other abiotic stress
- (c) Activation tagging
- (d) Plant virus mediated gene transfer.

